

Omni-Directional Stereographic Imaging System, Phase I

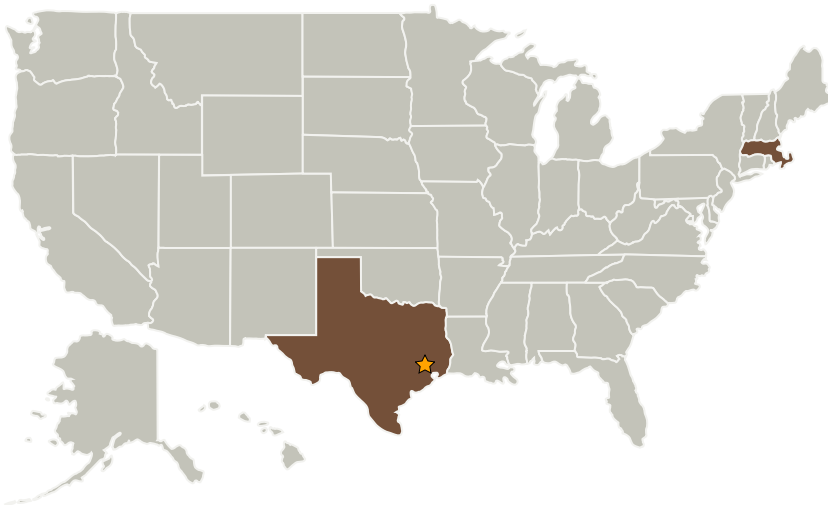
Completed Technology Project (2004 - 2005)



Project Introduction

The overarching challenge of tele-presence is to provide an environment to the human operator that is sufficiently familiar that the interface itself does not become burdensome and distract from the goals of the mission. The ultimate achievement would be to embed the operator into a scene in such a way as to convince him or her that they are actually on site. We propose a technology that can potentially achieve this by addressing and expanding on two specific technology needs outlined under the subtopic of human/robot interfaces: 1) Stereographic display systems that provide a large field of view, and high resolution, and 2) Techniques for capturing 360 degree video at a work site and redisplaying as a mosaiced virtual environment to the crewmembers back at the base camp. The extension to these ideas is a technology to offer Omni-Directional (full 4p steradian) stereographic information at an appropriately high resolution. The first innovation is the technique for acquiring the necessary information. The second is processing it to provide a continuous, unobstructed, Omni-Directional, stereographic field of view. A head mounted display with attitude tracking has been selected as the most appropriate display device to truly embed the users into the scene.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Axis Engineering Technologies	Supporting Organization	Industry	Cambridge, Massachusetts

Primary U.S. Work Locations

Massachusetts	Texas
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.2 Extravehicular Activity Systems
 - └ TX06.2.3 Informatics and Decision Support Systems